AMENDMENTS

IN THE CLAIMS:

1. (Original) A method of fabricating a ferroelectric memory device comprising:

fabricating a ferroelectric memory device having arrays of memory cells *via* a number of suitable fabrication processes;

determining a desired data retention lifetime for the memory cells of the ferroelectric memory device;

selecting a time parameter and a temperature parameter according to the desired data retention lifetime;

selecting a particular initial state according to the desired data retention lifetime;

programming the memory cells of the ferroelectric memory device to be in the selected initial state; and

performing a bake procedure on the ferroelectric memory device with the memory cells programmed to the selected initial state according to the selected time parameter and the selected temperature parameter.

2. (Currently Amended) The method of claim 1, wherein fabricating the ferroelectric memory device comprises fabricating a ferroelectric capacitor comprised of a bottom electrode, a top electrode, and a ferroelectric material in the respective memory cells.

3. (Original) The method of claim 2, wherein the ferroelectric material is $Pb(Zr,Ti)O_3$ (PZT).

4. (Original) The method of claim 1, wherein the determined data retention lifetime is 10 years of continuous use at 105 degrees Celsius.

5. (Original) The method of claim 1, wherein the determined data retention lifetime is 10 years of continuous use at 85 degrees Celsius.

6. (Original) The method of claim 1, further comprising performing lifetime testing on the ferroelectric memory device to determine estimated data retention lifetimes for the memory cells.

7. (Original) The method of claim 6, wherein the lifetime testing is performed prior to selecting the time parameter and the temperature parameter, and wherein the time parameter and the temperature parameter are further selected as a function of the estimated data retention lifetimes.

8. (Original) The method of claim 1, wherein the time parameter, the temperature parameter, and the initial state are selected to yield a data retention lifetime for the memory cells of the device that is greater than or equal to about the desired data retention lifetime.

9. (Original) The method of claim 1, further comprising performing a probe procedure that tests read/write capabilities of the memory cells.

10. (Original) The method of claim 1, wherein the selected initial state is selected to be positive.

11. (Original) The method of claim 1, wherein the selected initial state is selected to be negative.

12. (Original) The method of claim 6, wherein performing lifetime testing comprises performing a number of lifetime test cycles comprising:

writing same state data to a first capacitor and a second capacitor of the ferroelectric memory device;

baking the first capacitor and the second capacitor for a selected time at a

selected temperature;

performing a same state read on the first capacitor and the second capacitor to obtain same state read data;

comparing the same state read data with the written same state data ;

re-writing the same state read data to the first capacitor and the second capacitor;

writing opposite state data to the first capacitor and the second capacitor;

waiting a selected period of time so that the first capacitor and the second capacitor reach steady state;

performing an opposite state read to obtain opposite state read data; and

comparing the opposite state read data with the opposite state data.

13. (Original) The method of claim 12, wherein the same state data is "0" for the first capacitor and "1" for the second capacitor and the opposite state data is "1" for the first capacitor and "0" for the second capacitor.

14. (Original) The method of claim 1, further comprising packaging the memory device.

15. (Original) The method of claim 1, wherein performing lifetime testing comprises performing a number of lifetime test cycles comprising:

writing data of a first state to a first capacitor of the ferroelectric memory device;

baking the first capacitor for a selected time at a selected temperature;

performing a same state read on the first capacitor to obtain same state read data and remaining charge of the first capacitor in the first state;

comparing the same state read data with the written same state data ;

re-writing the same state read data to the first capacitor;

writing opposite state data to the first capacitor;

waiting a selected period of time so that the first capacitor reaches steady state;

performing an opposite state read to obtain opposite state read data and remaining charge of the first capacitor in the opposite state; and

comparing the opposite state read data with the opposite state data.

16. (Original) The method of claim 15, further comprising analyzing the obtained remaining charge data to determine data retention for the first state and the opposite state.

17. (Original) A method of fabricating a ferroelectric memory device comprising:

performing data retention lifetime testing on the ferroelectric memory device to obtain a tested data retention lifetime;

selecting a desired data retention lifetime;

comparing the desired data retention lifetime to the tested data retention lifetime;

selecting one or more bake parameters according to the desired data retention lifetime and the tested data retention lifetime; and

baking the ferroelectric memory device at least partially according to the one or more bake parameters to cause the ferroelectric memory device to have at least the desired data retention lifetime.

18. (Original) The method of claim 17, further comprising verifying the data retention lifetime for the ferroelectric memory device after baking the ferroelectric memory device.

19. (Original) The method of claim 17, wherein baking the ferroelectric device is not performed on the tested data retention lifetime being at least equal to the desired data retention lifetime.

20. (Original) A method of packaging a ferroelectric memory device comprising:

selecting one or more packaging parameters including a process time and a process temperature;

performing data retention lifetime testing on the ferroelectric memory device to obtain a tested data retention lifetime;

adjusting the process time and the process temperature according to the obtained tested data retention lifetime and a suitable data retention lifetime, wherein the process time and the process temperature are selected to selectively improve data retention of the memory device; and

packaging the device according to the one or more packaging parameters.

21. (Original) The method of claim 20, wherein the process time is about 15 seconds.

22. (Original) The method of claim 20, wherein the process temperature is greater than 200 degrees Celsius.

23. (Original) The method of claim 20, wherein the suitable data retention lifetime is about 10 years at about 85 degrees Celsius.